



## Keysource energy assessment improves data centre efficiency by 25%

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**Shakil Azam, Yorkshire Water**

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### overview

→ Yorkshire Water, a subsidiary of Kelda, provides water and waste water services to domestic and business customers across Yorkshire, servicing more than 4.7m people and 140,000 businesses. The company is committed to using advanced techniques and technologies to drive efficiencies and minimise environmental impact by reducing the energy consumption of its IT facilities.

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### the challenge

→ Yorkshire Water was looking to gain a greater understanding of the performance of its data centre facility and associated operating costs to enable the company to manage its IT infrastructure more closely and more responsibly. Yorkshire Water recognised that ongoing measurement was the key to lowering energy consumption and carbon emissions, so needed a data centre solutions partner to support the efficiency programme.

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### the solution

→ Yorkshire Water appointed Keysource to conduct an Energy Assessment to provide a review of its data centre’s energy use and see how the company could reduce overall operating costs and the environmental impact of the facility. An initial visit was undertaken by Keysource to obtain a performance snap shot of the 50 rack room, based in Bradford.

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Utilising the Green Grid metrics for measurement, Keysource measured the facility's Power Usage Effectiveness (PUE) figure at 2.3, which meant that only 43% of the total facility load was being used to power IT equipment. Following the survey and recommendation report from Keysource, Yorkshire Water implemented a number of suggested changes.

## 25% reduction in energy consumption

To measure the success of Keysource's recommendations, a second assessment then took place after a 12-month period to identify any potential efficiency changes. Yorkshire Water identified marked improvements in terms of overall performance and a reduction in energy consumption of more than **25%**. The PUE figure had improved to 1.7, which meant that now 59% of the total facility load was being used to power IT equipment.

Based on the measured IT load of 134kW and a power cost of 10p per kWhr, this resulted in a potential annual saving of up to **£70,000** for a PUE of 1.7 compared to a PUE of 2.3.

The improvements can be attributed to Keysource undertaking a full Computational Fluid Dynamics (CFD) analysis of Yorkshire Water's data centre which helped stakeholders understand airflow issues. As a result Keysource recommended the use of blanking panels, floor grille relocations, deployment of racks in hot and cold aisles to optimise airflow management and the introduction of a third cooling unit to improve efficiency.

**Shakil Azam, IT Service Provisions & Data Centre Manager commented: "Keysource's Energy Assessments and recommendations proved essential for our ongoing commitment to reducing energy consumption from our IT infrastructure. By working closely with Keysource, we have tapped into their extensive data centre knowledge and expertise, to achieve significant performance gains in terms of reduced costs and carbon emissions."**

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## the benefits



- **Partnership Approach** – A unique consultancy approach from Keysource provided useful advice to help Yorkshire Water achieve efficient power utilisation using efficient air flow management methods, whilst also improving the availability and predictability of cooling.
- **Energy Performance** – Following the implementation of Keysource recommendations, Yorkshire Water's PUE has improved to 1.7 resulting in a 25% reduction in energy consumption and 59% of the total facility load being used to power IT equipment.
- **Cost Saving** – Based on the measured IT load of 134kW and a power cost of 10p per kWhr, the potential annual saving could be up to £70,000 for a PUE of 1.7 compared to a PUE of 2.3.

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## can we help you and your company?



**Can we tender for your new data centre design and build project? Could your facility benefit from an energy efficiency assessment? Please get in touch...**

Keysource Limited, North Heath Estate,  
Horsham, West Sussex, RH12 5QE

**T: 0845 2043333 F: 0845 2043334**

**E: [enquiries@keysource.co.uk](mailto:enquiries@keysource.co.uk)**

**W: [www.keysource.co.uk](http://www.keysource.co.uk)**

**Mike West, Managing Director of Keysource says:**

**"Keysource's innovative approaches to data centre efficiency and measurement has set new standards in terms of the savings and PUE that are achievable. The Yorkshire Water project demonstrates that measurement followed by implementing best practice recommendations can prove very attractive indeed when the power savings available are assessed."**

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